

Muddy Creek Restoration Bridge Project



With Support From:





500 feet

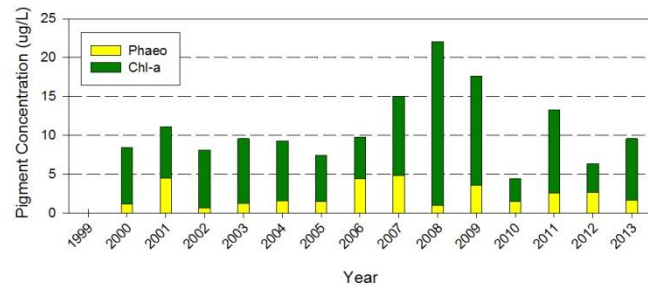
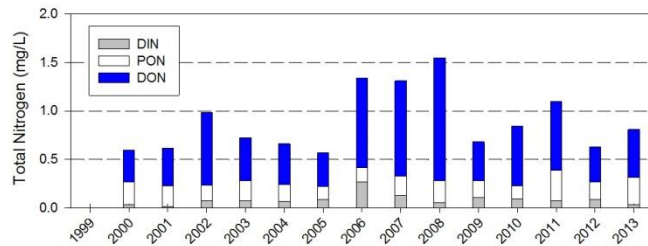
Existing Conditions

- ❖ Restricted tidal flushing
- ❖ Poor water quality
 - Total Nitrogen TMDL
 - Bacterial TMDL
- ❖ Wetlands impacts
 - Loss of marine wetlands
 - Introduction of invasive species
- ❖ Shellfish Closures
- ❖ Limitations on fish passage
- ❖ Limited public water access

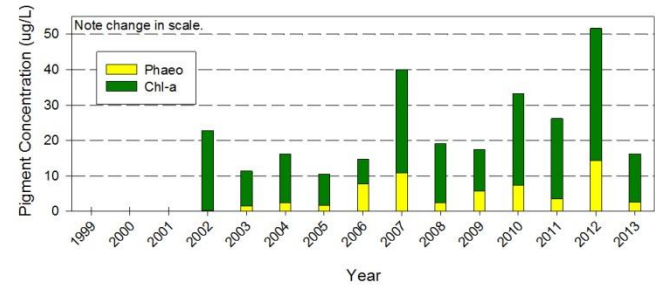
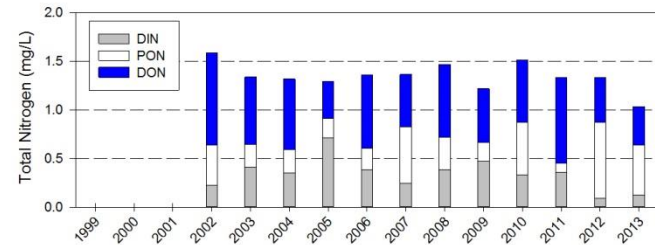


Existing Conditions

Muddy Creek (PBA-5)



Muddy Creek - Upper (PBA-5A)



Restoration Assessment

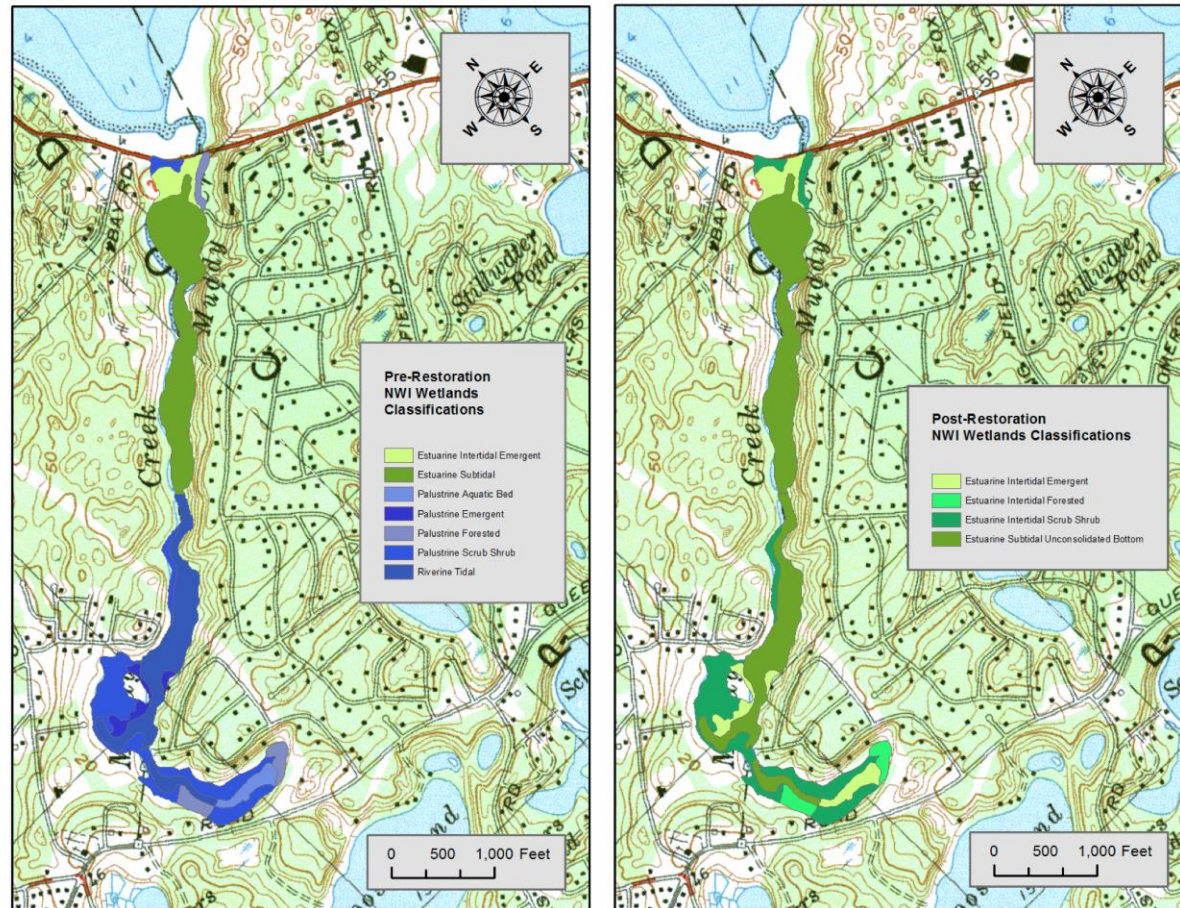
- ❖ Alternatives – Chatham MEP (2003)
- ❖ Priority Project – MassDER Wetland Restoration Program (2008)
- ❖ Hydrodynamic model → optimal opening (2009)
- ❖ Water Quality & Resource Assessments Confirmed Benefits (2010–2012)
- ❖ Design alternatives → single span bridge (2012)
- ❖ Design and permitting (2013–present)

Restoration Benefits – Wetlands

- ❖ 56 acres of wetlands restored
- ❖ Long-Term Restoration Benefits
 - Increased Salinity and Tidal Range
 - Reduction of Invasive Stands – Improved Biodiversity
 - Expansion of Tidal Mud Flats and Low Marsh Communities
 - New and Expanded Brackish & High Marsh Communities
 - Improved Habitat for several High Priority Species/Populations of migratory waterfowl & other migratory species.



Pre- and Post Wetlands



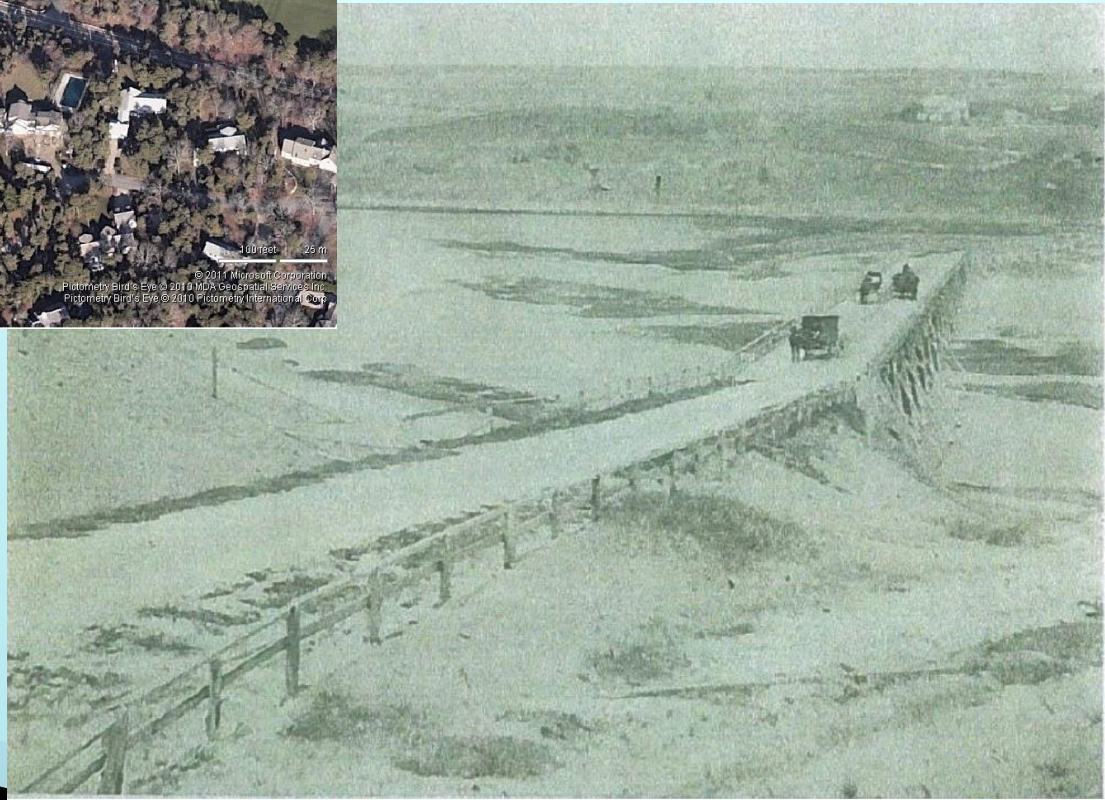
Restoration Benefits – Fish/Shellfish

❖ Long-Term Restoration Benefits

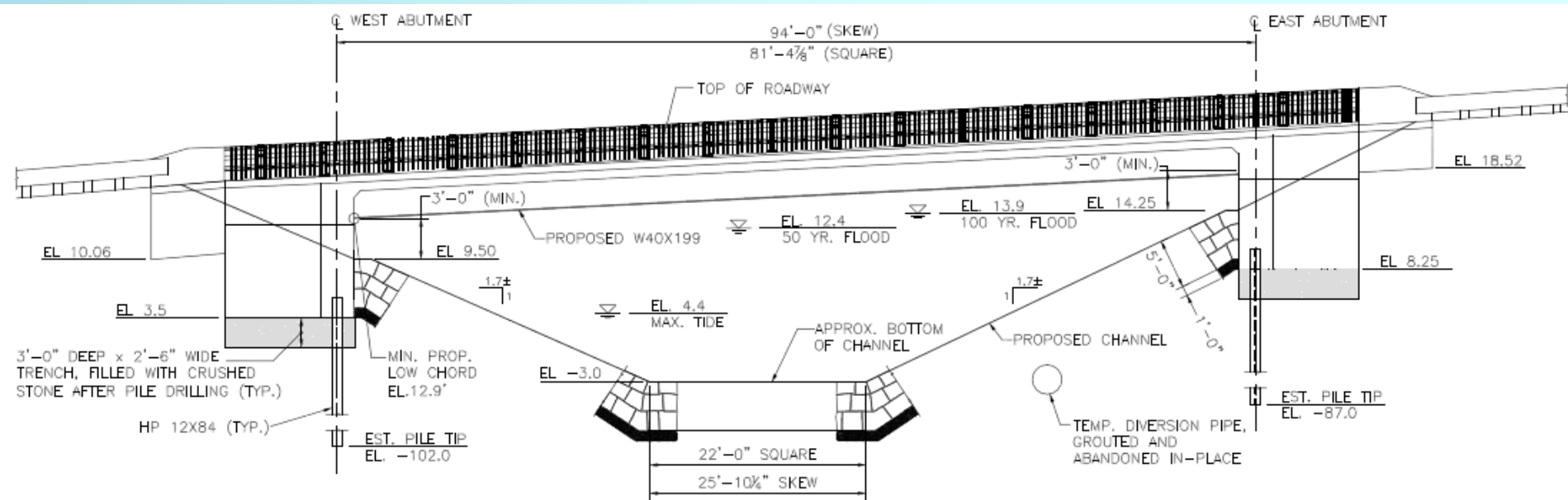
- Larger Channel Opening Will Improve Fish Passage Opportunities for American eel, Alewife, White Perch, Frost Fish and Blue Crab.
- Increased Tidal Exchange Will Improve Water and Habitat Quality
- Improved Shellfish habitat (formerly a robust habitat for quahog (*Mercenaria mercenaria*);



Project Design



PROPOSED BRIDGE STRUCTURE



SOUTH ELEVATION VIEW - CREEK SIDE

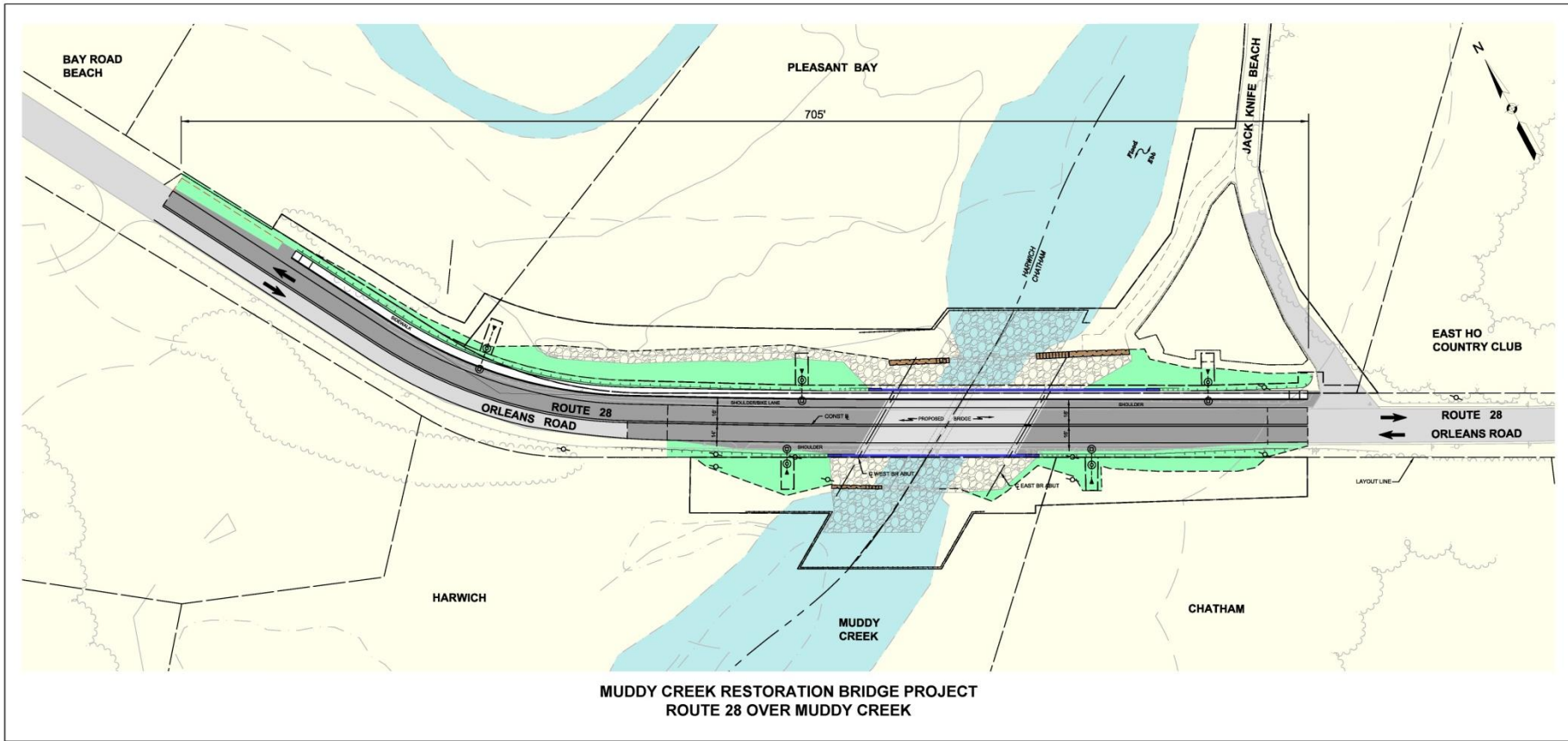
NORTH ELEVATION VIEW – PLEASANT BAY SIDE



SOUTH ELEVATION VIEW – CREEK SIDE



PROPOSED WORK



Muddy Creek Restoration Project

Change in Flood Extent under Proposed Conditions



— Proposed Average Spring High Tide

Lateral Increase in Flood Extent

10-year Storm

Flood Extent

Existing 10-Year Flood (4.7 ft)

Proposed 10-Year Flood (8.8 ft)

Existing and Proposed 35-year Storm (11.5 ft)

N

0

100

200

300

400

Feet

Muddy Creek Restoration Project

Change in Flood Extent under Proposed Conditions



0 50 100 150 200 Feet

— Proposed Average Spring High Tide

Lateral Increase in Flood Extent

10-year Storm

Flood Extent

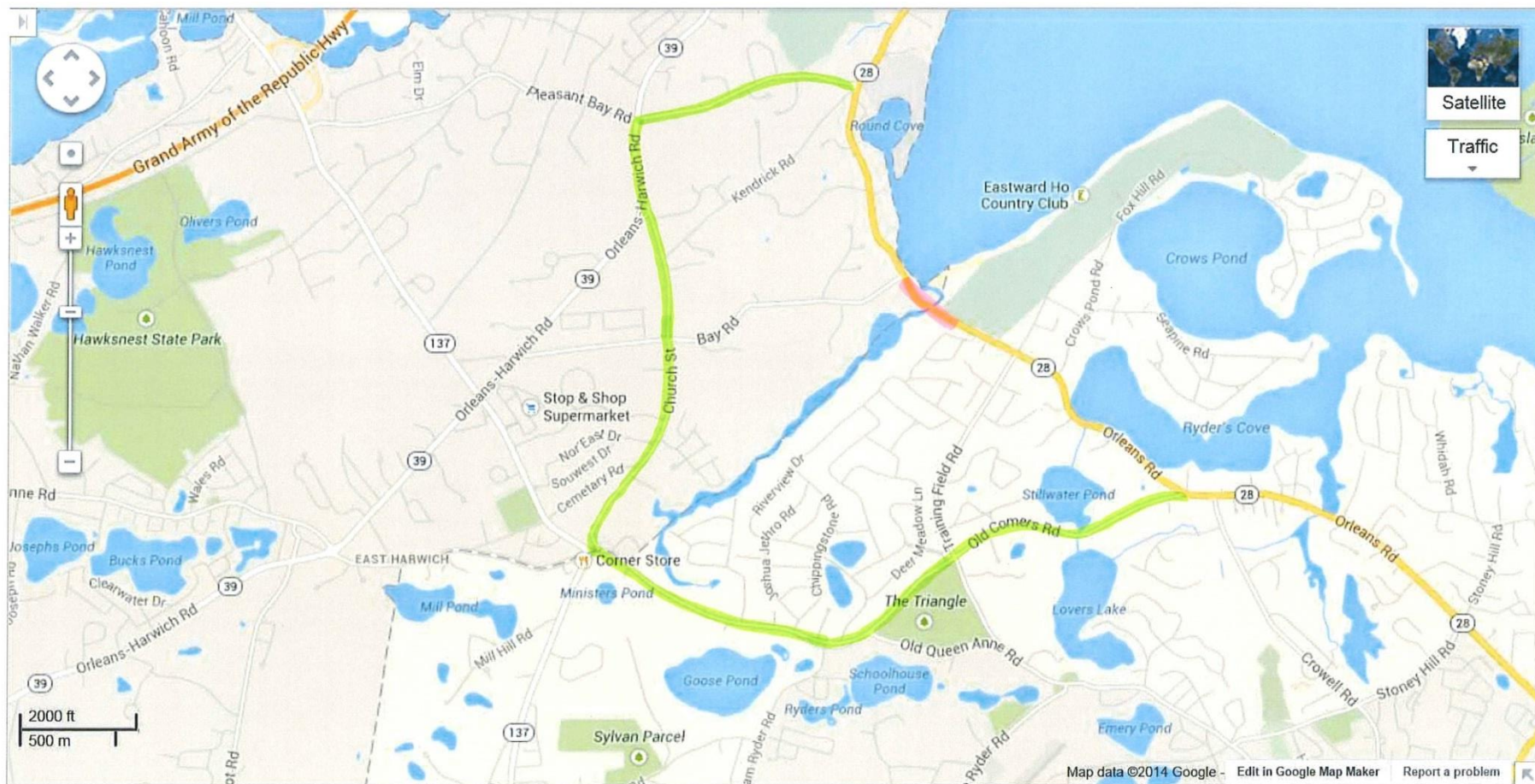
Existing 10-Year Flood (4.7 ft)

Proposed 10-Year Flood (8.8 ft)

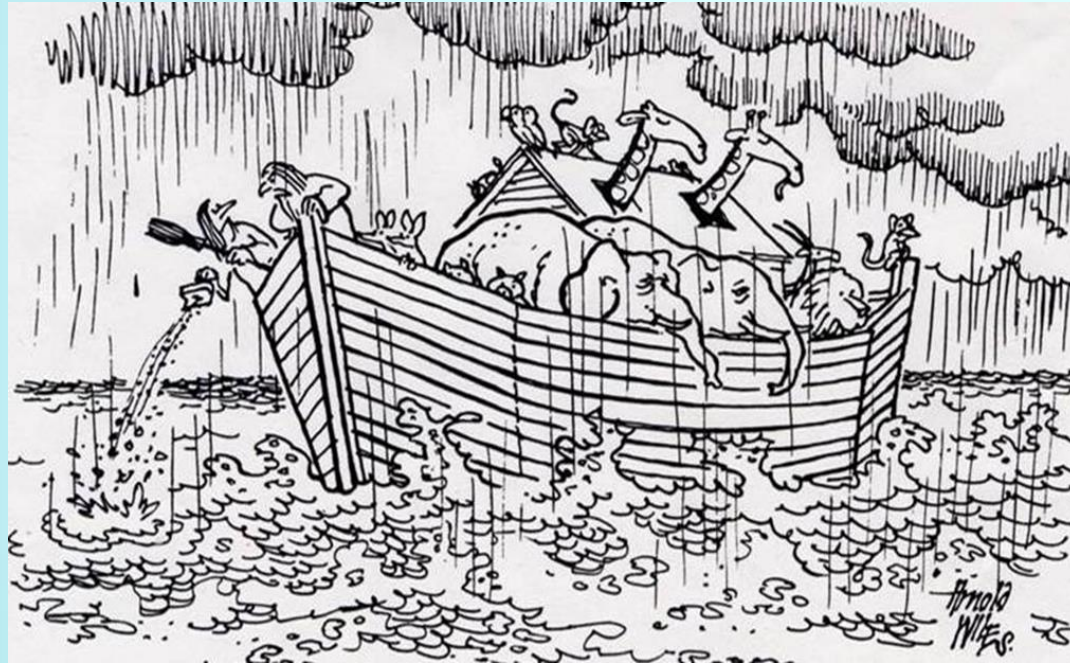
Existing and Proposed 35-year Storm (11.5 ft)

Project Milestones

- ❖ Complete Environmental Permitting 6/2015
- ❖ Complete MassDOT Approvals 7/2015
- ❖ Construction Start 9/2015
- ❖ Road Closure to Traffic 12/2015
- ❖ Road Open to Traffic 5/2016
- ❖ Final Paving, Marking,
Utility Relocation 5/2016
- ❖ Substantial Completion 6/2016



Questions?



“How many times must I tell you, the sea is not one vast, inexhaustible refuse dump.”

For more information visit the Following Websites:

www.pleasantbay.org

www.chatham-ma.gov

www.town.harwich.ma.us